

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of:

VLADIMIR GRUSHIN ET AL.

CASE NO.: PE0649 US DIV2

APPLICATION NO.: UNKNOWN

CONFIRMATION NO.: UNKNOWN

GROUP ART UNIT: UNKNOWN

EXAMINER: UNKNOWN

FILED: CONCURRENTLY HEREWITH

FOR: ELECTROLUMINESCENT IRIDIUM COMPOUNDS WITH FLUORINATED PHENYLPYRIDINES, PHENYLPYRIMIDINES, AND PHENYLQUINOLINES AND DEVICES MADE WITH SUCH COMPOUNDS

**INFORMATION DISCLOSURE STATEMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In compliance with 37 CFR 1.97 and 1.98, Applicants bring to the attention of the U.S. Patent and Trademark Office information that may be helpful in the examination of the above-identified patent application. All of the information is listed on attached Forms PTO/SB/08A, PTO/SB/08B, and PTO-892.

Benefit of the earlier filing dates of U.S. Patent Application No. 10/027,421 filed December 20, 2001 and U.S. Patent Application No. 09/879,014 filed June, 12, 2001 are claimed under 35 U.S.C. 120 for the above-referenced application and information cited in the priority applications is not supplied with this Information Disclosure Statement.

Should any fee be required in connection with the filing of this Information Disclosure Statement, please charge such fee to Deposit Account No. 04-1928 (E. I. du Pont de Nemours and Company).

Respectfully submitted,

  
MARY ANN CAPRIA  
Attorney for Applicants  
Registration No. 32,659  
Telephone: (302) 992-3749  
Facsimile: (302) 892-7949

Dated: October 29, 2003

Enclosures

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

**Substitute for form 1449A/PTO**

## **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

*(use as many sheets as necessary)*

Sheet 1 of 2

<i>Complete if Known</i>	
Application Number	10/027,421
Filing Date	DECEMBER 20, 2001
First Named Inventor	VLADIMIR GRUSHIN ET AL.
Group Art Unit	2815
Examiner Name	UNKNOWN
Attorney Docket Number	PE0649 US CIP

## U.S. PATENT DOCUMENTS

## FOREIGN PATENT DOCUMENTS

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

2

of

2

## Complete if Known

Application Number	10/027,421
Filing Date	DECEMBER 20, 2001
First Named Inventor	VLADIMIR GRUSHIN ET AL.
Group Art Unit	2815
Examiner Name	UNKNOWN

Attorney Docket Number

10/027,421

## OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		DJUROVICH, PETER I. ET AL., Ir(III) Cyclometalated Complexes As Efficient Phosphorescent Emitters in Polymer Blend and Organic LEDs, Polymer Preprints, 2000, 770-771, 41(1)	<input type="checkbox"/>
		CHATANI, NAOTO ET AL., Ru3(CO)12-Catalyzed Reaction of Pyridylbenzenes with Carbon Monoxide and Olefins. Carbonylation at a C-H Bond in the Benzene Ring, J. Org. Chem., 1997, 2604-2610, 62, American Chemical Society	<input type="checkbox"/>
		GOSMINI, CORINNE ET AL., Electrosynthesis of functionalized 2-arylpyridines from functionalized aryl and pyridine halides catalyzed by nickel bromide 2,2'-bipyridine complex, Tetrahedron Letters, 2000, 5039-5042, 41, Elsevier Science Ltd.	<input type="checkbox"/>
		CACCHI, SANDRO ET AL., The Palladium-Catalyzed Transfer Hydrogenation/Heterocyclization of B-(2-Aminophenyl-a,B-ynones. An Approach to 2-Aryl- and 2-Vinylquinolines, Synlett, 1999, 401-404, No. 4, Thieme Stuttgart, New York	<input type="checkbox"/>
		BALDO, M. A. ET AL., Very high-efficiency green organic light-emitting devices based on electrophosphorescence, Applied Physics Letters, July 5, 1999, 4-6, 75(1) American Institute of Physics	<input type="checkbox"/>
		BALDO, M. A. ET AL., High-efficiency fluorescent organic light-emitting devices using a phosphorescent sensitizer, Nature, February 17, 2000, 750-753, 403, Macmillan Magazines Ltd.	<input type="checkbox"/>
		WANG, YUE ET AL., (Hydroxyphenyl)pyridine derivative, its metal complexes and application as electroluminescence material, Chemical Abstracts Service, March 1, 2000, Database No. 133:315395	<input type="checkbox"/>
		DEDEIAN K. ET AL., A New Synthetic Route to the Preparation of a Series of Strong Photoreducing Agents: fac-Tris-Ortho-Metalated Complexes of Iridium(III) with Substituted 2-Phenylpyridines, Inorg. Chem., 1991, 1685-1687, 30(8), American Chemical Society	<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

Examiner  
SignatureDate  
Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box → +

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

Approved for use through 10/31/2002. OMB 6051-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		<i>Complete if Known</i>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		Application Number	10/027,421
<i>(use as many sheets as necessary)</i>		Filing Date	DECEMBER 20, 2001
		First Named Inventor	VLADIMIR GRUSHIN ET AL.
		Group Art Unit	2815
		Examiner Name	UNKNOWN
Sheet	1	of	2
		Attorney Docket Number	PE0649 US CIP

## U.S. PATENT DOCUMENTS

## FOREIGN PATENT DOCUMENTS

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box



PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO				Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application Number	10/027,421
(use as many sheets as necessary)				Filing Date	DECEMBER 20, 2001
				First Named Inventor	VLADIMIR GRUSHIN ET AL.
				Group Art Unit	2815
				Examiner Name	UNKNOWN
Sheet	2	of	2	Attorney Docket Number	PE0649 US CIP

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS				
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T <sup>2</sup>
		BALDO, M.A. et al., High-efficiency fluorescent organic light-emitting devices using a phosphorescent sensitizer, Nature, February 17, 2000, 750-753, Vol. 403		
		DJUROVICH, PETER I. et al., Ir(III) Cyclometalated Complexes as Efficient Phosphorescent Emitters in Polymer Blend and Organic LEDs, Polymer Reprints, 2000, 770-771, 41(1)		
		BALDO, M.A. et al., Very high-efficiency green organic light-emitting devices based on electrophorescence, Applied Physics Letters, July 5, 1999, 4-6, 75(1), American Institute of Physics		
		LOHSE, OLIVIER, et al., The Palladium Catalysed Suzuki Coupling of 2- and 4-Chloropyridines, Synlett, 1999, 45-48, No. 1, Thieme Stuttgart, New York		
		BALDO, M.A. et al., Highly efficient phosphorescent emission from organic electroluminescent devices, Nature, September 10, 1998, 151-154, Vol 395		
		DEDEIAN, K. et al, A New Synthetic Route to the Preparation of a Series of Strong Photoreducing Agents: fac Tris-Ortho-Metalated Complexes of Iridium (III) with Substituted 2-Phenylpyridines, Inorganic Chemistry, 1991, 1685-1687, 30(8)		

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

**Notice of References Cited**Application/Control No.  
09/879,014Applicant(s)/Patent Under  
Reexamination  
GRUSHIN ET AL.Examiner  
Erik KielinArt Unit  
2813

Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-3,718,488	02-1973	Trofimenko et al.	106/1.28
	B	US-2002/0064681 A1	09-2001	Takiguchi et al.	428/690
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)

*		
X	U	Thompson et al. "Ir(III) cyclometalated complexes as efficient phosphorescent emitters in polymer blend organic LEDs" Polymer Preprints 41(1), 2000, pp. 770-771.
X	V	Dedeian et al. "A new synthetic route to the preparation of a series of strong photoreducing agents: fac tris-othro-metalated complexes of iridium(III) with substituted 2-phenylpyridines" Inorganic Chemistry, Vol. 30, 1991, 1685-1687.
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.